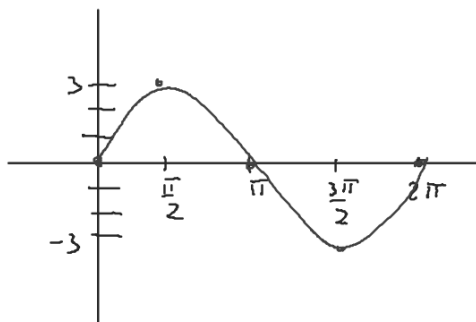


Determine the amplitude, period, phase shift and vertical shift for each function. Make sure to label all significant coordinates and asymptotes.

$$y = 3 \sin x$$

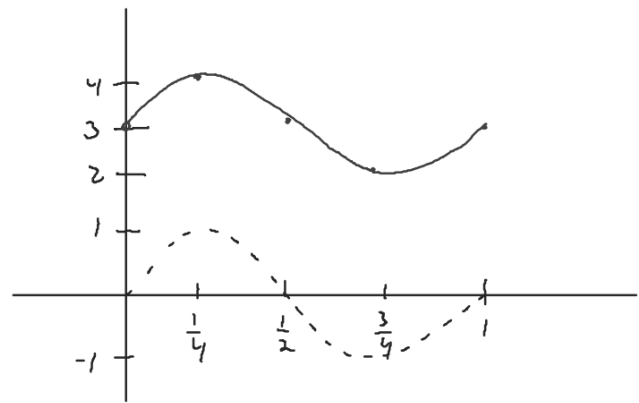
Amp = 3
Per 2π
P.S. None
V.S. None



Determine the amplitude, period, phase shift and vertical shift for each function.
Make sure to label all significant coordinates and asymptotes.

$$y = \sin 2\pi x + 3$$

Amp = 1
Per $\frac{2\pi}{2\pi} = 1$
P.S. None
V.S. up 3



Determine the amplitude, period, phase shift and vertical shift for each function.
Make sure to label all significant coordinates and asymptotes.

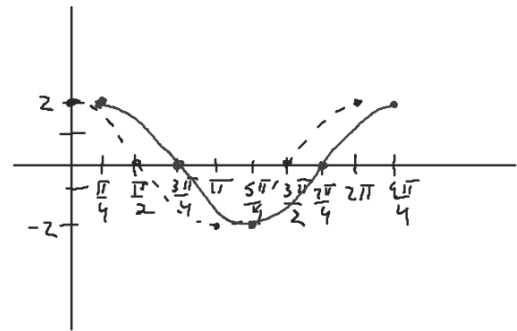
$$y = 2 \cos\left(x - \frac{\pi}{4}\right)$$

$$\text{Amp} = 2$$

$$\text{Per} \frac{2\pi}{1} = 2\pi$$

$$\text{P.S. } \frac{\pi}{4} \text{ Right}$$

$$\text{V.S. None}$$



Determine the amplitude, period, phase shift and vertical shift for each function. Make sure to label all significant coordinates and asymptotes.

$$y = -2 \cos 4 \left(x - \frac{\pi}{8} \right) - 2$$

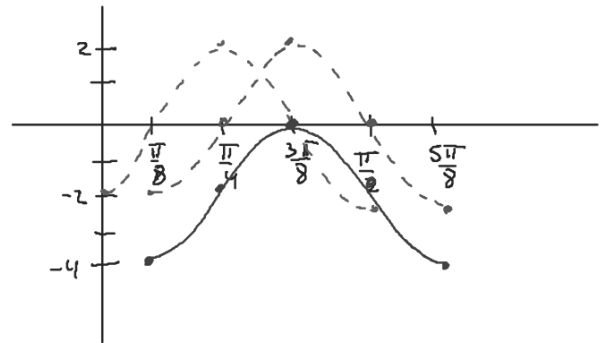
Amp = 2

Reflect over x-axis

Per $\frac{2\pi}{4} = \frac{\pi}{2}$

P.S. $\frac{\pi}{8}$ Right

V.S. Down 2



Determine the amplitude, period, phase shift and vertical shift for each function.
 Make sure to label all significant coordinates and asymptotes.

$$y = \sec 2(x + \pi) + 2$$

$$\text{Amp} = 1$$

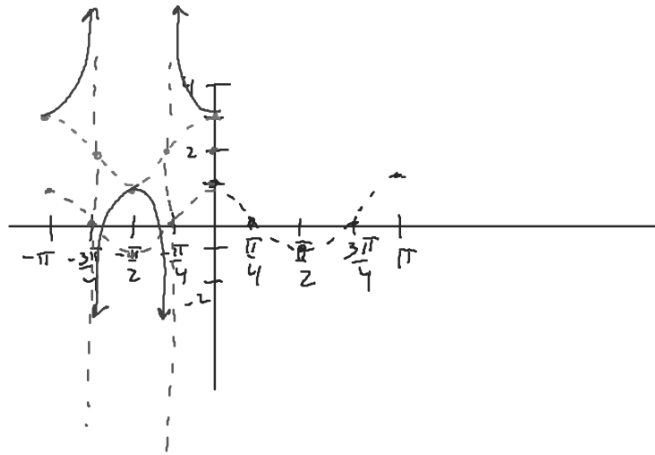
$$\text{Per} \frac{2\pi}{B} = \frac{2\pi}{2} = \pi$$

$$\text{P.S. Left } \pi$$

$$\text{V.S. up } 2$$

$$\text{Asymptotes}$$

$$x = -\frac{3\pi}{4}, -\frac{\pi}{4}$$



Determine the amplitude, period, phase shift and vertical shift for each function. Make sure to label all significant coordinates and asymptotes.

$$y = 2 \csc\left(x + \frac{\pi}{4}\right)$$

Determine the amplitude, period, phase shift and vertical shift for each function. Make sure to label all significant coordinates and asymptotes. Then graph 2 periods of the function.

$$y = 2 \tan \frac{\pi}{2}(x + 1) - 1$$

Determine the amplitude, period, phase shift and vertical shift for each function. Make sure to label all significant coordinates and asymptotes. Then graph 2 periods of the function.

$$y = \cot 3\left(x - \frac{\pi}{3}\right)$$

Write the equation of the sine function give the following information.

Amplitude = 4, Period = 3π

On a particular day, the depth of water in feet at the entrance to a harbor is modeled by the function $d(t) = 8 + 4 \sin 0.5t$, where t is hours after 6 A.M.

a. What are the minimum and maximum depths on this day? What times do they happen?

Maximum Depth _____

Time it occurs _____

Minimum Depth _____

Time it occurs _____

b. Edgar has a boat that needs at least 6 feet of water. During what times after 6 A.M. and before 7 P.M. will the water at the entrance to the harbor be less than 6 feet deep? Write and solve an equation to help you answer the question.